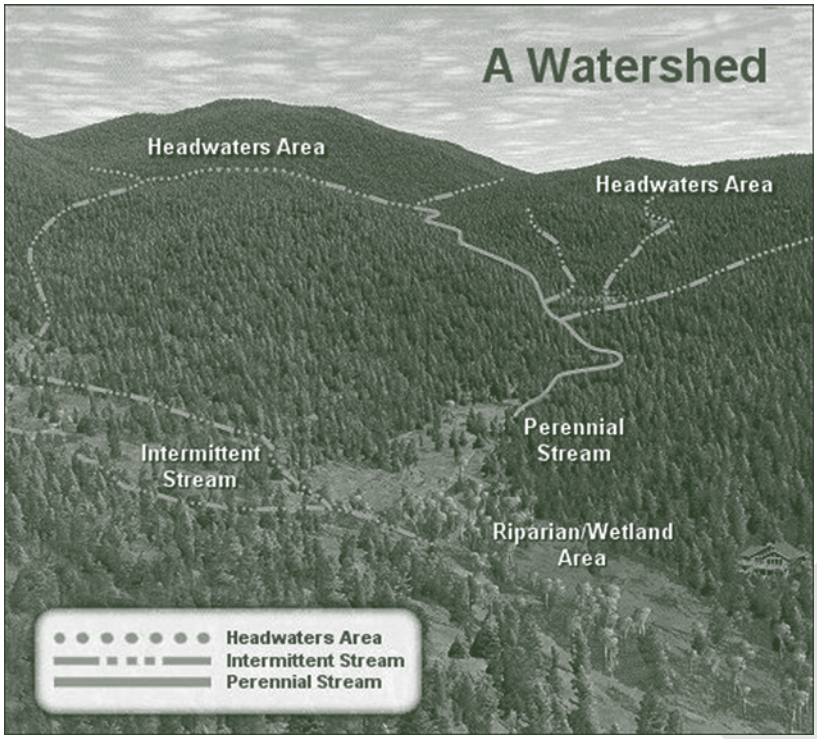
CHAPTER 2

WATERSHEDS

2 - Watersheds

Watersheds

A watershed is a land area where precipitation collects and funnels to an outlet–usually a stream. The image below shows perennial streams, intermittent streams and wetland areas illustrated over a watershed.



An intermittent stream has water in it for only a portion of the year but has defined channels and banks, and evidence of scouring is apparent. A perennial stream has water in it all year and also has a well-defined channel and established banks. As the image depicts, most intermittent streams occur near the upper portion of the watershed while most perennial streams are near the lower portion of the watershed.

A comparison widely used is that of the roof on your home. Rain falls on the roof and moves by gravity toward the gutters, collecting debris and materials as it flows. The water eventually reaches the downspouts where it concentrates, picking up speed and additional debris. Different land uses affect watersheds differently. The effect of storms is dependent on slope, soil type and overall land use. For example, precipitation moves more slowly through a forested watershed than through an urban watershed because organic forest soils absorb the rainfall's energy more efficiently than rooftops and pavement in urban settings.

Land-disturbing activities such as road construction and timber skidding–as well as site preparation–can greatly affect the movement of water and associated debris, including sediment, to a stream. One must be careful when conducting operations so soil movement is minimized. Of particular importance are the intermittent streams that, despite not having water in them most of the year, can contribute to downstream water quality. The use of heavy equipment during timber harvesting can lead to altered and compacted soil causing downstream water quality problems if forest operators do not properly use BMPs.

Sensitive areas such as wetlands, bogs, seeps, and marshes are found in all watersheds and should be treated with care and receive special protection. The Clean Water Act of 1972 (Public Law 92-500) and its amendments mandate water quality sufficient to provide "fishable" and "swimmable" waters. It requires that all "waters of the United States" will be protected from degradation. This includes but is not limited to headwaters creeks, rich bottomland hardwood bogs, marshes and permanently flooded cypress-tupelo areas. The scope of the legal jurisdiction was expanded in 1977 by amendments redefining protection to include the "waters of the United States" and their "adjacent wetlands." This protection, under Section 404, specifies that anyone engaging in activities impacting waters and wetlands is required to secure a permit before proceeding, unless exempted. In forested wetlands, the law provides an exemption from permitting under Section 404 for normal ongoing silvicultural operations provided that the "15 Federally Mandated Best Management Practices" are followed. (See Chapter 10 for listing.)